COMMENT NO.	EPA COMMENT	NOTES
Cover Letter Co	mments	
CL1	EPA has reviewed the Conceptual Site Model Update (CSM Update). This document was submitted to EPA on September 17, 2004. EPA comments are attached. The CSM Update focuses on the groundwater pathway and includes site summaries for 21 sites that are discharging or potentially discharging hazardous substances to the Willamette River via the groundwater migration pathway. EPA believes that the CSM represents a good first effort at incorporating information regarding upland sources of contamination into the Portland Harbor RI/FS. However, additional information is necessary to properly evaluate the relationship of upland sources to the river.	The LWG agrees with the last comment. Section 1.5 was left intentionally blank in the site summaries, pending the results of the Round 2 investigations. Round 2 data and new upland site information will be used to further evaluate the relationship as part the next iteration of the CSM
CL2	The overall goal of the CSM is to develop a comprehensive understanding of the sources, migration pathways, contaminant fate and transport properties, exposures and receptors at the Portland Harbor site. However, the CSM Update does not include information regarding in-water sediment contamination and its relationship to current or historic discharges of contamination via the groundwater migration pathway (or other mechanisms for the release of hazardous substances to Willamette River sediments such as over-water activities, stormwater discharges and riverbank erosion), nor does the document include information about receptors that may be affected by contaminants discharging to the Willamette River via the groundwater migration pathway.	Given the range of DQOs and spatial coverage of historical sediment data, it would have been premature to evaluate sediment data relative to groundwater discharges or other pathways. The Round 2 sediment investigation was designed to address these issues and was in the process of being implemented at the time of the CSM Update was published. Additional risk assessment discussions and documents also have been completed since submittal of the CSM Update. An updated discussion of receptors, other pathways, and in-water sediment contamination relative to the various pathways will be provided in the next iteration of the CSM.
CL3	Another limitation of the CSM Update is the inclusion of subjective and sometimes biased language in the site summaries. The site summaries should include an objective summary of factual information regarding the nature and extent of contamination at upland facilities and the potential for hazardous substance releases at upland facilities to impact the river at levels that represent a risk to human health or the environment. In order to ensure that the site summaries are objective, EPA is requesting the resubmittal of a number of upland site summaries prior to revision of the CSM Updated in conjunction with the Round 2 Comprehensive Site Summary Report.	These comments will be addressed with resubmittal of the identified site summaries (or in an addendum).
	A schedule for the submittal of the remaining site summaries was submitted to EPA via email by Keith Pine on December 16, 2004. EPA has not agreed to this schedule and further discussion between the Lower Willamette Group and EPA on the timeframe for submittal of the remaining site summaries is required.	A revised schedule for submitting the remaining site summaries has been discussed and approved by EPA. Our current schedule proposal is summarized in the cover letter accompanying this document.

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Genera	I Comme	nts	
G1	(a)	Need for a Comprehensive Conceptual Site Model: The Conceptual Site Model Update (CSM Update) represents a good first step in consolidating information from the upland site investigations with the in-water investigation. Although EPA acknowledges that the CSM Update focuses specifically on the groundwater pathway, the overall goal of the CSM is to develop a comprehensive understanding of the sources, migration pathways, contaminant fate and transport properties, exposures and receptors at the Portland Harbor site. This will require the development, over time, of a Comprehensive Conceptual Site Model (Comprehensive CSM) that incorporates these other elements.	The LWG agrees. The CSM to date addresses the physical CSM and was not intended to incorporate human health and ecological CSMs. Consistent with the iterative approach to developing the CSM, a more comprehensive CSM that addresses these other aspects will be included in the Round 2 Comprehensive Report followed by the RI Report.
G1	(b)	Many of these other elements are presented in a relatively large number of technical documents such as the hydrodynamic model technical memorandum (TM), the food web model TM, the four ecological risk assessment TMs, the natural attenuation TM, groundwater pathway evaluation TM, and upland site characterization reports.	The LWG agrees. It is anticipated that most, if not all, the referenced TMs will have been prepared and approved for inclusion in the next iteration of the CSM, which will be included in the Round 2 Comprehensive Report.
G1	(c)	A key goal of the Comprehensive CSM is to incorporate the information contained within these documents into an overall depiction of the key processes at the site. Subsequent iterations of the CSM (Round 2 Site Characterization Report and Draft RI Report) should strive to be as comprehensive as possible with existing information.	See response to G1b
G2	(a)	Need for Additional Information Related to Groundwater Pathway: One of the key questions surrounding the groundwater pathway evaluation is how risks to human health and the environment will be evaluated. Section 7 of the CSM should frame this discussion in a meaningful way that would assist our evaluation of this pathway. For example, Section 4.1.3.5 of the Comprehensive Ecological Risk Assessment Technical Memorandum does not describe how exposure to groundwater will be evaluated. Instead the document states that this will be addressed in the groundwater pathway TM. The CSM should be the vehicle for linking the groundwater evaluation with the ecological risk assessment from the stand point of sources, pathways and receptors.	The linking of the groundwater evaluation with the ecological and human health risk assessments is currently under discussion and is being developed for the Groundwater SAP and FSPs. This comment will be addressed in the next iteration of the CSM.

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G2	b	In addition, the groundwater migration pathway is complicated by the presence of contaminants present is sediment and surface water that potentially contribute to the contamination observed in the transition zone. As a result, Figure 4-1, which includes an excellent depiction of key upland migration pathways, could benefit from a depiction of in-water sources and upstream sources.	Figure 4-1 will be modified in the next iteration of the CSM.
G3		Site Summaries: There are a number of inaccuracies associated with the Site Summaries presented in Appendix A and the figures included in the main body of the report. Although EPA recognizes that new information is being generated at the upland sites on an ongoing basis, it is critical that these summaries be as accurate and as complete as possible. In addition, the inclusion of subjective and sometimes biased language in the site summaries is inappropriate in many cases. EPA agrees that the site summaries should include conclusions about the degree to which a site has been characterized or whether a contaminant migration pathway is complete. However, these conclusions must be made on a consistent basis for all sites evaluated. In the comments provided below, EPA has identified which site summary reports and figures must be revised and resubmitted to correct inaccuracies or to remove subjective language.	This comment will be incorporated in the next iteration of the CSM.
	Comme		
S1		Section 1.0 – Introduction and Purpose: This section could benefit from a discussion of the relationship between Section 5.0 of the Programmatic Work Plan, the CSM Update and the numerous technical memorandums and other documents that ultimately feed into the Comprehensive CSM.	This comment will be incorporated in the next iteration of the CSM.
S2	(a)	Section 1.2 – CSM Deliverables and Schedule: The first sentence in this section should as follows: As noted above, this CSM Update is prepared according to the Work Plan and decisions made in meetings between EPA, the six Tribes involved in Portland Harbor, other agencies, natural resource trustees, and the LWG.	This change will be made in the next iteration of the CSM.
S2	(b)	In addition, this section should be revised to note that the summaries for the remaining sites have not been completed by December 2004. The time-frame of delivery of these summaries is still being discussed by EPA and the LWG.	See CL3

COM	MENT NO.	EPA COMMENT	NOTES
S4	(a)	Section 1.3 – Relationship of the CSM to the RI/FS Process:	This change will be made in the next iteration of the CSM.
		The first bullet should include both current and historic upland sources of contamination.	
S4	(b)	Another bullet – identifies in-water sources of contamination – should be added.	This change will be made in the next iteration of the CSM that will be provided in the Round 2 Comprehensive Report.
S4	(c)	In general, the CSM should distinguish between upland and in-water sources of contamination, historic and ongoing sources of contamination and primary and secondary sources of contamination.	Upland and in-water sources are identified in the site summaries. This information will be included, to the extent it is known, in the next iteration of the CSM that will be provided in the Round 2 Comprehensive Report.
S4	(d)	The CSM should describe the relationship between these sources of contamination as they relate to contaminant migration pathways and receptors. It is unclear how this CSM update will assist DEQ in identifying upland sites where additional work must be done.	The site summaries provide information on sources and pathways, primarily assembled from DEQ files. At most sites, work has not been conducted to confirm the presence of upland COIs in in-water media. This is a major objective of the Round 2 data collection effort and the RI in general. (see CL2)
S4	(e)	The third bullet of this section should specifically list storm water discharge as key contaminant transport pathway.	Storm water is a direct discharge and will be indicated as such in the next iteration of the CSM.
S4	(f)	The final paragraph in this section should be revised or deleted entirely. Refinement of the CSM is necessary to better understand the relationship between sources of contamination, pathways and receptors. The current update is focused on groundwater. However, the update does not incorporate information such as Round 1 sediment chemistry data. Moreover, it is unclear how the Round 2 sediment and surface water approaches will be supported by the updated CSM. This CSM is designed to support the Round 2 groundwater pathway evaluation. A comprehensive CSM scheduled to be delivered as part of the Round 2 Data Summary Report will be used to focus the Round 3 investigation.	As discussed between LWG and EPA and its partners, an objective of this version of the CSM was to support design of the Round 2 groundwater pathway evaluation and to document, in part, the rationale for Round 2 sediment sampling program. This statement is not intended to indicate that this iteration of the CSM is being used to scope these efforts. The paragraph will be modified accordingly. In addition, Round 1 data are included in the summary of sediment chemistry data for each site (Table 2), as applicable.

СОММ	ENT NO.	EPA COMMENT	NOTES
S5	(a)	1.4 – Objectives of the CSM: This section should distinguish the objectives of this CSM Update from the objectives of the broader, comprehensive, site-wide CSM should be discussed (Comprehensive CSM). The limitations of the CSM Update should be identified (e.g., did not evaluate over water activities, direct discharge, storm water discharges or bank erosion). Many pathways are minimally described in the site summary reports and will need to be further evaluated and discussed in the future CSM updates.	These statements were substantially made in Sections 8 and 9. These sections will be referenced in the next iteration of the CSM.
S5	(b)	On page 4 modify the following language "The objectives of this CSM Update are to:" by changing "are to" to "include." As edited the partial sentence should read: The objectives of the CSM Update include:	This change will be made in the next iteration of the CSM that will be provided in the Round 2 Comprehensive Report.
S5	(c)	It should be noted that surface runoff includes storm water run off, sheet flow and river bank erosion.	This section will be modified accordingly. This statement is made in Section 6.1.
S6		Section 2.1.1 – Programmatic Work Plan: A goal of the CSM is to identify the key processes that control risk and affect remedy selection. This should include a discussion of exposure pathways (e.g., bioaccumulation of contaminants in fish tissue) and physical processes (e.g., floods and sediment transport).	See response to Comment G1a.
S7		Section 2.0 – Preliminary Conceptual Site Model: This section should include a section that discusses the groundwater pathway evaluation TM. Because this CSM Update is focused on groundwater, there is a direct linkage between these two documents that should be discussed.	See response to Comment G2a.
S8		Section 3.2, Page 12, Aerial Photographs and Section 4.3.4.4, Page 41: Future updates of the CSM should include a review and evaluation of historical maps. Specifically, historical maps from the late-1800's through 1936 should be reviewed to characterize predevelopment conditions and to identify geographic features that may influence groundwater flow (former channels, ponds, berms) or provide preferential groundwater flow paths (former stream channels, etc.). In addition, Figures 3-1 through 3-6 should include a depiction of changes in shoreline configuration.	These changes will be considered if maps from the late 1800s through 1936 can be located.

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S9	Section 4.1.1 Overwater Activities. This section could benefit from greater specificity. For example, particular over water activities that may have impacted sediment should be identified. A table should be prepared that summarizes over water activities and the potential for sediment contamination as a result of those activities.	As noted above, the focus of this iteration of the CSM was the groundwater pathway. Additional description and evaluation of other pathways will be included in the next iteration of the CSM that will be provided in the Round 2 Comprehensive Report.
S10	Section 4.1.2 Industrial Facilities. This section also could benefit from greater specificity. A summary table would be helpful that gives an indication of the types of facilities, duration of industrial activities in certain river miles. The information should be presented in the following manner, by column: • Year operation began • Year operation ended • Name of operation • Type of industrial activity • Location by river mile Long-term operations and operations with the greatest potential for sediment impacts should be highlighted.	This request will be evaluated for the next iteration of the CSM that will be provided in the Round 2 Comprehensive Report. There is a wide range in available data for these items. Presentation of partial data or information only at sites where it is available may not provide a meaningful representation of LWR conditions.
S11	Section 4.1.3 Upriver Sources. Future iterations of the CSM should begin to identify potential upriver sources including specific upriver facilities that may have released hazardous substances as well as other potential sources such as point and non-point discharges to the Willamette River.	Potential upriver sources are identified in Section 3.8 and listed in Appendix E of Programmatic Work Plan.
S12	Section 4.3, Page 25. "Storm water" and "free phase liquids" should be added to the list in the 1st sentence of the 2nd paragraph of Section 4.3.	Stormwater is a pathway included in Direct Discharge (see Section 4.3.3). Free phase liquids may be present in various forms of direct discharge and in groundwater discharge, and is addressed within these pathways.
S13	Section 4.3.4.1, Page 33, Paragraph 1 in "Recent Fill". It should be clarified that the use of the term "clean" in this context refers to the percent fines in the dredge fill and is not a statement regarding the presence of contaminants.	A statement to this effect will be included in the next iteration of the CSM that will be provided in the Round 2 Comprehensive Report.
S14	Section 4.3.4.1, Page 33, Paragraph 2 in "Recent Fill". It could be noted that contamination in some areas is believed to be the result of the placement of contaminated dredge fill.	The LWG agrees with this comment. This change will be incorporated in the next iteration of the CSM that will be provided in the Round 2 Comprehensive Report.

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S15	Section 4.3.4.1, Page 34. It should be clarified that the use of the term "clean" in this context refers to the percent fines in the Fine Grained Pleistocene Flood Deposits and is not a statement regarding the presence of contaminants.	The LWG agrees with this comment. This change will be incorporated in the next iteration of the CSM that will be provided in the Round 2 Comprehensive Report.
S16	Section 4.3.4.2, Page 35. The text should describe what separates the four hydrogeologic units. This discussion should focus on whether the units represent at barrier to vertical migration or are simply geologic facies changes.	The LWG agrees with this comment. This change will be incorporated in the next iteration of the CSM that will be provided in the Round 2 Comprehensive Report.
S17	Section 4.3.4.6, Page 44, Number 2. Terrestrial ecological receptors could also be exposed to groundwater discharges on the ground surface from seeps.	LWG agrees with this comment. As shown on Figure 5-3, terrestrial exposure to groundwater seeps is considered "complete and minor."
S18	This figure could include the placement of contaminated dredge fill on the uplands that may act a potential "source" of contaminants to the river.	The LWG agrees with this comment. This change will be incorporated in the next iteration of the CSM that will be provided in the Round 2 Comprehensive Report.
S19	The plume maps can get too busy from the multiple plume types. Consider requiring multiple figures of the same sheet. An example of where this is needed is at the Siltronic site. One cannot differentiate the TCE plume from the MGP VOC plume, etc. The RPAC plume on Siltronic would likewise not be discernable if plotted. In addition, these figures could benefit from a depiction of waste management and handling areas, areas of known soil contamination. All major sources of contamination to the river should be depicted. All individual subsection figures within Figure 6-1 commented on below must be resubmitted.	We agree that sites with multiple plumes may need clarification and alternative depictions will be considered for the next iteration of the CSM that will be provided in the Round 2 Comprehensive Report. With regard to other depictions, the information presented on these figures was the subject of meetings and planning documents developed in 2004 (i.e., CSM Outline, ExxonMobil Site Summary, Site Summary Template, Guide to Plume Maps), all of which were reviewed by EPA. These maps were intended to summarize some of the information presented in the site summaries. The site summaries provide significant additional information.
		As also discussed in meetings, depicting areas with soil contamination is difficult because there is a wide range of objectives, completeness, and methods, and interpretations of what is "contaminated". Presentation of partial data or information only at sites where it is available may not provide a meaningful or representative depiction of upland conditions in the ISA corridor.

COMMENT NO.	EPA COMMENT	NOTES
S20	Figure 6-1a. The known area of groundwater contamination should be shown. The figure is misleading and doesn't indicate that OSM has groundwater issues.	This comment will be addressed in the next revision of the OSM site summary. Any changes to the site summary will be reflected in this figure as applicable.
S21	Figures 6-1e, f, m and n: Figures that depict groundwater plumes migrating to the Willamette River should be depicted in a consistent manner. For example, Figure 6-1e shows the groundwater plume from the McCormick and Baxter site as extending into the Willamette River. As a result, other sites where groundwater is known to be discharging into the river should be depicted in a similar fashion. The figures depicting the groundwater plume at the GASCO facility (including the Siltronic Facility) and ARKEMA facility should extend into the river based on the known extent of sediment and groundwater contamination.	See response to S20.
S22	Figure 6-1e and 6-1f. The groundwater plumes should be depicted as being commingled when they reach the river.	This comment needs more clarification. Commingled with the river, other plumes?
S23	Figure 6-1f and 6-1m. The ARKEMA VOC, total DDT, chloride, and perchlorate plumes should be shown extending into the river.	This comment will be addressed in the next revisions of the ARKEMA site summary.
S24	Figure 6-1g. The known area of groundwater contamination should be shown. The figure is misleading and doesn't indicate that TCE has been detected in groundwater at the Cascade site.	This comment will be addressed in the next revision of the Cascade site summary. Note that a consistent threshold for depicting plumes could not be agreed upon by LWG, EPA, and DEQ. These thresholds (or "Basis of Plume") are shown for each site on Table 6-2 and on the figures in the site summaries. Cascade is not included in this table because a plume is not depicted, but the threshold is included in the site summary. The method in which this information is presented with be evaluated with the next iteration of the CSM that will be provided in the Round 2 Comprehensive Report.
S25	Figure 6-1h. Facility names for the Cascade and Union Pacific Railroad Albina Yard (UPRR Albina) sites should be added to this figure.	The LWG agrees with this comment. This change will be incorporated in the next iteration of the CSM that will be provided in the Round 2 Comprehensive Report.

COMMENT NO.	EPA COMMENT	NOTES
S26	Figure 6-1i and 6-1j. All known areas of groundwater contamination should be shown. The figure is misleading and doesn't indicate that the UPRR Albina Yard site has groundwater issues.	This comment will be addressed in the next revision of the UPRR Albina Yard site summary. UPRR was not included in this first submittal of site summaries, as indicated on the figure.
S27	Figure 6-1k. The upstream end of the Gunderson site (gully area and gantry (asbestos)) has river bank contamination and should be so identified.	This comment will be addressed in the next revision of the Gunderson site summary.
S28	According to Table 6-2, a criterion of five times the tap water PRG or five times the AWQC was used to define plume boundaries. The VOC and herbicide plume extends across most of the Siltronic facility and crosses more of the ARKEMA site. The Rhone Poulenc plume also includes arsenic and a broad chloride plume from dechlorination of their plume. An ammonia plume also extends across a portion of the ARKEMA site from upgradient sources; Rhone Poulenc is a suspected source of the ammonia.	This comment will be addressed in the next revision of the Rhone Poulenc site summary. In general, "suspected" plumes are not included in these depictions. (The correct table reference is Table 6-3.)
S29	Figure 6-1n. As stated earlier, the groundwater plume from the McCormick and Baxter site has been drawn extending into the river based on known sediment contamination. The groundwater plume from the GASCO facility (including the Siltronic Facility) should also extend into the river for accuracy and completeness. In addition, this figure needs to show the extent of manufactured gas plant (MGP) wastes including VOCs, SVOCs, and cyanide associated with the GASCO facility and also clearly show the TCE plume from the Siltronic Facility. This plume is fairly well defined and is distinct from the area currently shown on this figure. In addition, it should be noted that recent data from the Siltronic TCE investigation suggests the deep groundwater contamination may be associated with the former Rhone Poulenc facility and other facilities.	The comments regarding Gasco and Siltronics will be addressed in the revised or updated site summaries. In general, "suspected" plumes are not included in these depictions.
S30	Table 3-1 (or Section 3.1). Table should include a footnote explaining the DEQ Tier ranking.	This change will be made in the next iteration of the CSM that will be provided in the Round 2 Comprehensive Report.

COMMENT NO.	EPA COMMENT	NOTES
S31	Tables 3-1 and 6-1 Tables 3-1 and 6-1 should include the General Electric Decommissioning Facility (ODEQ ECSI No. 4003) located at 2727 NW 29 th Avenue. This site is a potential source of PCB sediment contamination detected adjacent to City of Portland Outfall 17. The term "n/a" presented in Figure 3-1 should be defined in a footnote.	The list of sites evaluated in the CSM is defined as sites on the ECSI or CLR list within the ISA and within ½ mile of the river (see Sections 1.1 and 2.1.2). Additional sites will be considered on a case-by-case basis. The footnote will be added.
S32	<u>Table 4-5</u> . The ARKEMA NPDES Permit requires one year of monitoring during 2004/2005 for contaminants listed on the 303d list and legacy contaminants (e.g., DDT). These chemicals should be identified in Table 4-5.	Future updates of the CSM and site summaries will include updated information.
S33	 Table 6-1: It is unclear whether Table 6-1 consistently distinguishes between current and historical migration pathways. Since the purpose of this table is to identify potential sources to the Willamette River, the columns should be checked to account for both current and historic migration pathways. For example, all columns for the McCormick and Baxter site have been checked, however, the remedy is largely completed and some pathways are not currently complete. In contrast, Rhone Poulenc lists only the groundwater pathway, while storm water represents a current and historic pathway of concern. Other changes that should be made to Table 6-1 include: Foss - Remove the check and question mark from the Overland Transport Column. ARKEMA - add checks to the Direct Discharge and Overwater Column. Gunderson- add checks to the riverbank erosion box. 	Table 6-1 is generated from Table 1 of the site summaries. As updates are made for individual sites, Table 6-1 will be updated.
S34	Table 6-2, Plume Characterization Status: Consistent defined terms should be used. Several sites (Foss, Wacker, Time Oil, Premier Oil, Northwest Pipe and Casing, etc.) are listed as "incomplete" when there are ongoing investigations. Similar sites indicate "RI in progress". The Rhone Poulenc (see comment on Figure 6-1n) and Gunderson sites are defined as complete - however, the investigation are ongoing.	This table is also generated from the site summaries. As updates are made for the individual sites, Table 6-2 will be updated.

COMMENT NO.	EPA COMMENT	NOTES
S35	Table 6-2, McCormick and Baxter: The preferential groundwater pathway should be complete. The Cleanup column should note that the sediment cap was placed in 2004 and the soil cap is planned for 2005.	This change will be made in the next iteration of the CSM that will be provided in the Round 2 Comprehensive Report.
S36	Figure 4-2b: Figure 4-2b should depict the potential for direct migration of NAPL from upland facilities to the Willamette River via the groundwater migration pathway. Arrows should also be used to depict contaminants dissolving out of the NAPL and migrating to the Willamette River via the groundwater migration pathway. In-water sediment contamination should also be depicted on Figures 4-2a and 4-2b.	The LWG agrees with this comment. This change will be incorporated in the next iteration of the CSM that will be provided in the Round 2 Comprehensive Report.
S37	Section 9, Third Bullet: The last sentence reads: "However, data presented in the site summaries were summarized in as a consistent manner as possible." As indicated in our General Comment above and in comments on specific site summaries below, EPA does not agree that site information was "summarized in as a consistent manner as possible." As described below, site summaries where information was presented in a biased or incomplete manner must be resubmitted in order for this statement to be true.	This comment will be addressed by revising the individual site summaries requiring resubmittal.
S38	Section 9, Fifth Bullet: This bullet should be revised to read: "A variety of sources of information were consulted for this report and the site summaries. This information was taken primarily from site files at the Oregon Department of Environmental Quality, comprised of information reported under numerous regulatory programs, or reports being conducted under DEQ oversight in accordance with the Oregon Hazardous Waste Cleanup law. Although this information is expected to be reliable, the information is subject to change if errors are discovered or new information becomes available."	The LWG agrees with this comment. This change will be incorporated in the next iteration of the CSM that will be provided in the Round 2 Comprehensive Report.
S39	Section 9, Sixth Bullet: It is clear that the site summaries for individual LWG members underwent considerable review prior to inclusion in the CSM. EPA requires the site summaries be revised to be an unbiased summary of factual information. It was not clear what the bullet was meant to address, but it should be deleted. To the extent individual LWG members gathered the data about their facilities, it is not appropriate to disclaim its accuracy in this report.	This revision will be considered with the next iteration of the CSM.